WHAT IS CLAIMED IS:

1. A method for allocating data packet flows among a plurality of data channels of a network node, comprising steps of:

classifying data packets to be transmitted via said data channels into a plurality of data packet flows, wherein a first data packet flow is assigned to and then queues in a first data channel to be transmitted;

obtaining a first flow index according to the amount of a first data packet flow queuing in said first data channel, and the amount of a second data packet flow assigned to said first data channel; and

determining whether said second data packet flow is to be transferred from said first data channel to another data channel to be transmitted according to a comparing result of said first flow index and a threshold value.

2. The method according to claim 1 wherein said step of classifying said data packets into said data packet flows comprises sub-steps of:

performing an operation of a specified tag value included in each of said data packets to obtain respective feature values of said data packets; and

classifying the data packets having the same feature value in the same data packet flow.

3. The method according to claim 2 wherein said tag value includes a destination media access control (DMAC) address, an internet protocol (IP) address and a transmission control protocol (TCP) address.

4. The method according to claim 2 wherein said operation is an exclusive OR (XOR) operation.

5. The method according to claim 1 wherein said second data packet flow is the one assigned to said first data channel and having the least data packet amount at a certain time point.

6. The method according to claim 1 wherein said first flow index is the sum of the amount of said first and said second data packet flows.

7. The method according to claim 1 wherein said transference determining step comprises sub-steps of:

obtaining a second flow index according to the amount of said second data packet flow and the amount of a third data packet flow queuing in a second data channel where said second data packet flow is to be transferred when said first flow index is greater than said threshold value; and

transferring said second data packet flow from said first data channel to said second data channel to be transmitted when said second flow index is no greater than said threshold value.

8. The method according to claim 1 wherein said transference determining step comprises sub-steps of:

obtaining a second flow index according to the amount of said second data packet flow and the amount of a third data packet flow queuing in a second data channel where said second data packet flow is to be transferred when said first flow index is greater than said threshold value; and

remaining said second data packet flow to be assigned to said first data channel when said second flow index is greater than said threshold value.

9. The method according to claim 1 wherein said transference determining step comprises sub-steps of:

obtaining a second flow index according to the amount of said second data packet flow and the amount of a third data packet flow queuing in a second data channel where said second data packet flow is to be transferred when said first flow index is greater than said threshold value;

transferring said second data packet flow from said first data channel to said

second data channel to be transmitted when said second flow index is no greater than said threshold value; and

remaining said second data packet flow to be assigned to said first data channel when said second flow index is greater than said threshold value.

10. The method according to claim 9 wherein said second data channel has the least amount of data packets in queue than the other data channels at a certain time point.

11. The method according to claim 1 wherein said transference determining step is repetitively performed at a constant interval.

12. The method according to claim 1 further comprising a step of transmitting a broadcast data packet after said first data packet flow via said first data channel when said second data packet flow is determined to be transferred from said first data channel to a second data channel.

13. The method according to claim 12 wherein said second data packet flow starts to be transferred via said second data channel after said broadcast data packet is received by at least one of said data channels.

14. The method according to claim 12 wherein said second data packet flow starts to be transferred via said second data channel after a preset time period from the insertion of said broadcast data packet to be transmitted via the first data channel.

15. The method according to claim 12 wherein said second data packet flow starts to be transferred via said second data channel after said broadcast data packet is received by at least one of said data channels, and if there is no data channel receiving said broadcast data packet at the end of a preset time period, said second data packet flow starts to be transferred via said second data channel.

16. The method according to claim 15 wherein said broadcast data packet

comprises an identifying code of said second data packet flow.

17. A method for allocating data packet flows among a plurality of data channels of a network node, comprising steps of:

classifying data packets to be transmitted via said data channels into a plurality of data packet flows, wherein a first data packet flow queues in a first data channel to be transmitted, and a second data packet flow is assigned to said first data channel behind said first data packet flow;

transferring said second data packet flow from said first data channel to another data channel to be transmitted and transmitting a broadcast data packet after said first data packet flow via said first data channel when the amounts of said first data packet flow, said second data packet flow and a third data packet flow queuing in said another data channel comply with a predetermined relationship; and

transmitting said second data packet in response to said broadcast data packet.

18. The method according to claim 17 wherein said predetermined relationship is that the sum of the amounts of said first data packet flow and said second data packet flow is greater than a threshold value, and the sum of the amounts of said third data packet flow and said second data packet flow is no greater than a threshold value.

19. The method according to claim 17 wherein said second data packet flow starts to be transferred after said broadcast data packet is received by at least one of said data channels, and if there is no data channel receiving said broadcast data packet at the end of a preset time period, said second data packet flow also starts to be transferred.

20. The method according to claim 17 wherein said second data packet flow is the one assigned to said first data channel and having the least data packet

amount at a certain time point.

21. The method according to claim 17 wherein said broadcast data packet comprises an identifying code of said second data packet flow.